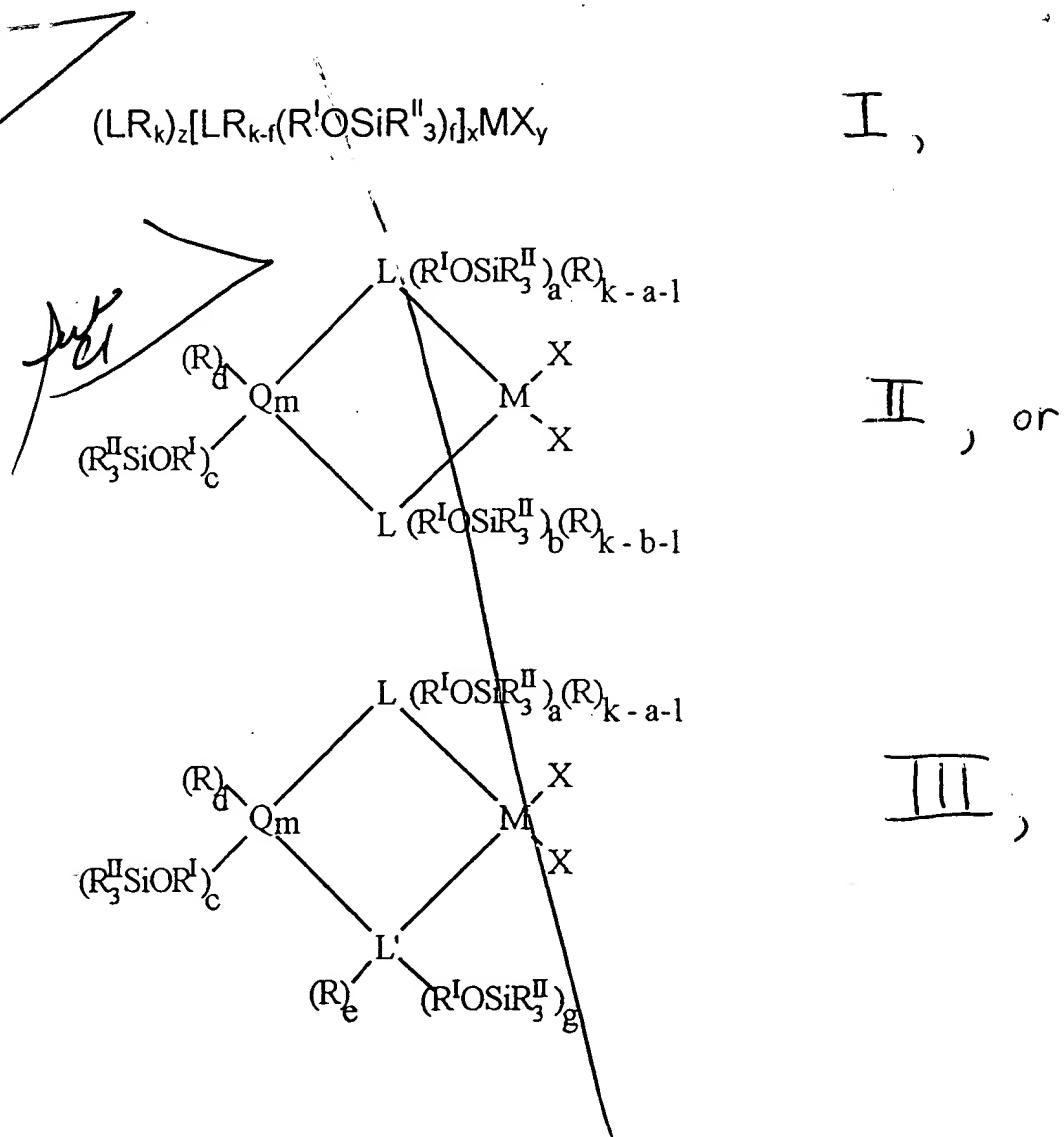


compound is defined by [the following general formulas] formula I, II, or III:

*B1  
Cont*



wherein:

the L groups are [,] equal to or different from each other, wherein each L is selected from the group [comprising:] consisting of cyclopentadienyl, indenyl, tetrahydroindenyl, fluorenyl, octahydrofluorenyl, and [or] benzoindenyl; each R is independently [selected from] hydrogen, linear or branched C<sub>1</sub>-C<sub>20</sub> alkyl, linear or branched C<sub>3</sub>-C<sub>20</sub> cycloalkyl, linear or branched C<sub>6</sub>-C<sub>20</sub> aryl, linear or branched C<sub>3</sub>-C<sub>20</sub> alkenyl, linear

*(b) Cross*

or branched C<sub>7</sub>-C<sub>20</sub> arylalkyl, linear or branched C<sub>7</sub>-C<sub>20</sub> alkylaryl,  
linear or branched C<sub>8</sub>-C<sub>20</sub> arylalkenyl, [linear or branched,  
optionally substituted by 1 to 10 halogen atoms,] or a group  
SiR<sup>II</sup><sub>3</sub>, wherein the C<sub>1</sub>-C<sub>20</sub> alkyl, the C<sub>3</sub>-C<sub>20</sub> cycloalkyl, the C<sub>6</sub>-C<sub>20</sub>  
aryl, the C<sub>3</sub>-C<sub>20</sub> alkenyl, the C<sub>7</sub>-C<sub>20</sub> arylalkyl, the C<sub>7</sub>-C<sub>20</sub> alkylaryl,  
and the C<sub>8</sub>-C<sub>20</sub> arylalkenyl are optionally substituted with 1 to 10  
halogen atoms;

the [each] R<sup>I</sup>[,] groups are equal to or different from each other,  
wherein each R<sup>I</sup> is a divalent aliphatic or aromatic hydrocarbon  
group containing from 1 to 20 carbon atoms, optionally containing  
from 1 to 5 heteroatoms of groups 14 to 16 of the [periodic table]  
Periodic Table of the [elements] Elements, and optionally  
containing boron; [preferably it is: C<sub>1</sub>-C<sub>20</sub> alkylene, C<sub>3</sub>-  
C<sub>20</sub>cycloalkylene, C<sub>6</sub>-C<sub>20</sub> arylene, C<sub>7</sub>-C<sub>20</sub> alkenyl, C<sub>7</sub>-C<sub>20</sub> arylalkylene,  
or alkylarylene, linear or branched, or a group SiR<sup>II</sup><sub>2</sub>;]

each R<sup>II</sup> is independently [selected from] linear or branched C<sub>1</sub>-C<sub>20</sub>  
alkyl, linear or branched C<sub>3</sub>-C<sub>20</sub> cycloalkyl, linear or branched C<sub>6</sub>-  
C<sub>20</sub> aryl, linear or branched C<sub>3</sub>-C<sub>20</sub> alkenyl, linear or branched C<sub>7</sub>-  
C<sub>20</sub> arylalkyl, linear or branched C<sub>8</sub>-C<sub>20</sub> arylalkenyl, or linear or  
branched C<sub>7</sub>-C<sub>20</sub> alkylaryl[, linear or branched; preferably R<sup>II</sup> is  
methyl, ethyl or isopropyl];

each Q is independently [selected from] B, C, Si, Ge, or Sn;  
M is a lanthanide, an actinide, or a metal of group 3, 4, or 10 of  
the Periodic Table[, Lanthanide or Actinide] of the Elements, and  
M has a valence;

each X is independently [selected from:] hydrogen, chlorine,  
bromine, OR<sup>II</sup>, NR<sup>II</sup><sub>2</sub>, C<sub>1</sub>-C<sub>20</sub> alkyl, or C<sub>6</sub>-C<sub>20</sub> aryl ;

L' is N or O;

when L is cyclopentadienyl, k is equal to 5[,]; when L is indenyl,  
k is equal to 7[,]; when L is fluorenyl or benzoindenyl, k is  
equal to 9[,]; when L is tetrahydroindenyl, k is equal to 11; and

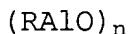
when  $L$  is octahydrofluorenyl,  $k$  is equal to 17;  
 $z$  is equal to 0, 1, or 2;  
 $x$  is equal to 1, 2, or 3;  
 $y$  is equal to 1, 2, or 3;  
 $x + y + z$  is equal to the valence of  $M$ ;  
 $m$  is [an integer which can assume the values] equal to 1, 2, 3 or 4;  
 $a$  [and  $b$  are integers] is an integer whose value ranges from 0 to  $k-1$ ;  
 $b$  is an integer whose value ranges from 0 to  $k-1$ ;  
 $f$  is an integer whose value ranges from 1 to  $k$ ;  
 $g$  is [an integer whose value ranges from] equal to 0 to 1;  
 $c$  [and  $e$  are] is equal to 0 or 1;  
 $e$  is equal to 0 or 1;  
 $a + b + c$  is at least 1;  
 $a + g + c$  is at least 1;  
 $d$  is equal to 0, 1, or 2;  
when  $Q$  is  $B_2$  then  $c + d = 1$ ;  
when  $Q$  is C, Si, Ge, or Sn, then  $c + d = 2$ ;  
when  $L'$  is N, then  $g + e = 1$ ; and  
when  $L'$  is O, then  $g = 0$  and  $e = 0$ .

*Bl  
Cust*

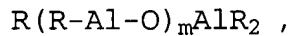
2. (amended once) A heterogeneous [Heterogeneous] catalytic composition according to claim 1 wherein the group  $R^I\text{OSiR}^{II}_3$  is [selected from]  $\text{CH}_2-\text{CH}_2-\text{OSiMe}_3$ ,  $\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{OSiMe}_3$ ,  $\text{CH}_2-\text{O}-\text{CH}_2-\text{OSiMe}_3$ ,  $\text{O}-\text{CH}_2-\text{CH}_2-\text{OSiMe}_3$ ,  $\text{SiMe}_2-\text{CH}_2-\text{CH}_2-\text{OSiMe}_3$ ,  $\text{SiMe}_2-\text{OSiMe}_3$ , or  $\text{SiMe}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{OSiMe}_3$ .

3. (amended twice) A heterogeneous [Heterogeneous] catalytic composition according to claim 1 wherein M is titanium, zirconium, or hafnium.

C 4. (amended twice) A heterogeneous [Heterogeneous] catalytic  
composition according to claim 1 wherein the alumoxane is represented  
by [the formulas] a formula:



or



wherein **R** is an alkyl or an aryl group containing from 1 to 20  
carbon atoms; **n** ranges from 1 to 40[,]; and **m** ranges from 3 to 40.

B1  
C 5. (amended twice) A heterogeneous catalytic [Heterogeneous  
catalyst] composition according to claim 1 wherein the inorganic  
support is

selected from the group consisting of silica, alumina, silica  
alumina, aluminum phosphates, and mixtures thereof.

6. (amended twice) A heterogeneous catalytic [Heterogeneous  
catalyst] composition according to claim 1 comprising a transition  
metal, wherein [the content in] the transition metal [is  
comprised] comprises between 0.01 and 3% by weight of the catalyst  
system.

C 7. (amended twice) A heterogeneous catalytic [Heterogeneous  
catalyst] composition according to claim 6 wherein the [content in]  
transition metal [is comprised] comprises between 0.1 and 1% by  
weight of the catalyst system.

C 8. (amended twice) A process [Process] for [the] polymerization  
of alpha olefins in a slurry or in a gas phase, [characterized by]  
wherein the polymerization is catalyzed by [the use of] the  
heterogeneous catalyst composition of claim 1.

Please add the following new claims.

*CR126* 11. A heterogeneous catalytic ~~system~~ <sup>Compos. for</sup> as claimed in Claim 1, wherein each  $R^I$  is linear or branched  $C_1-C_{20}$  alkylene, linear or branched  $C_3-C_{20}$  cycloalkylene, linear or branched  $C_6-C_{20}$  arylene, linear or branched  $C_7-C_{20}$  alkenyl, linear or branched  $C_7-C_{20}$ , linear or branched arylalkylene, linear or branched alkylarylene, or a group  $SiR^{II}2$ .

*B2* 11. A heterogeneous catalytic ~~system~~ <sup>Compos. for</sup> as claimed in Claim 1, wherein  $R^{II}$  is methyl, ethyl, or isopropyl.

*C* 12. A heterogeneous catalytic ~~system~~ <sup>Compos. for</sup> as claimed in Claim 12, wherein  $R^{II}$  is methyl, ethyl, or isopropyl.

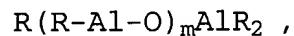
*C* 13. A heterogeneous catalytic ~~system~~ <sup>Compos. for</sup> as claimed in Claim 2, wherein M is titanium, zirconium, or hafnium.

*C* 14. A heterogeneous catalytic ~~system~~ <sup>Compos. for</sup> as claimed in Claim 13, wherein M is titanium, zirconium, or hafnium.

*C* 15. A heterogeneous catalytic ~~system~~ <sup>Compos. for</sup> as claimed in Claim 2, wherein the alumoxane is represented by a formula:



or



wherein R is an alkyl or an aryl group containing from 1 to 20 carbon atoms; n ranges from 1 to 40; and m ranges from 3 to 40.

*C* 16. A heterogeneous catalytic ~~system~~ <sup>Compos. for</sup> as claimed in Claim 3, wherein the alumoxane is represented by a formula:

$(RA_1O)_n$ 

or

 $R(R-Al-O)_mAlR_2$ ,

wherein **R** is an alkyl or an aryl group containing from 1 to 20 carbon atoms; **n** ranges from 1 to 40; and **m** ranges from 3 to 40.

C 17. A heterogeneous catalytic system as claimed in Claim 16,  
wherein the alumoxane is represented by a formula:

 $(RA_1O)_n$ 

or

 $R(R-Al-O)_mAlR_2$ ,

wherein **R** is an alkyl or an aryl group containing from 1 to 20 carbon atoms; **n** ranges from 1 to 40; and **m** ranges from 3 to 40.

C 18. A heterogeneous catalytic system as claimed in Claim 2,  
wherein the inorganic support is selected from the group  
consisting of silica, alumina, silica alumina, aluminum  
phosphates, and mixtures thereof.

C 19. A heterogeneous catalytic system as claimed in Claim 3,  
wherein the inorganic support is selected from the group  
consisting of silica, alumina, silica alumina, aluminum  
phosphates, and mixtures thereof.

W 21. A process for polymerizing a monomer or a mixture of a monomer and a comonomer, wherein the process comprises:  
contacting the heterogeneous catalytic system claimed in Claim 1 with the monomer or the mixture to polymerize the monomer or the mixture.--